

CALIFORNIA'S HEALTH

DEC 5 '45

WILTON L. HALVERSON, M.D.
DIRECTOR OF PUBLIC HEALTH

STATE DEPARTMENT OF PUBLIC HEALTH
ESTABLISHED APRIL 15, 1870

PUBLISHED SEMI-MONTHLY

ENTERED AS SECOND-CLASS MATTER FEB. 21, 1922, AT THE POST OFFICE AT SACRAMENTO, CALIFORNIA, UNDER THE ACT OF AUG. 24, 1912. ACCEPTANCE FOR MAILING AT THE SPECIAL RATE OF POSTAGE PROVIDED FOR IN SECTION 1103, ACT OF OCT. 3, 1917

SACRAMENTO (14), 631 J STREET, 2-4711

SAN FRANCISCO (2), 668 PHELAN BLDG., 740 MARKET ST., UN 8700

LOS ANGELES (12), STATE OFFICE BLDG., 217 W. FIRST ST., WA 1271

VOLUME 3, NUMBER 10

NOVEMBER 30, 1945

ANN WILSON HAYNES
Editor

THE PUBLIC HEALTH IMPORTANCE OF AMEBIASIS

HERBERT G. JOHNSTONE, PH.D.
Assistant Professor of Bacteriology
University of California Medical School

It is not at all improbable that for several years large numbers of persons will continue to return to this country from overseas infected with *Endamoeba histolytica*, the causative organism of amebiasis. Of immediate concern to the medical and public health authorities are the recently released civilian and military prisoners, as well as Army and Navy personnel, who upon return home still retain infections with this protozoan parasite. It is problematical whether these persons will serve as potential foci of outbreaks of amoebic dysentery in this country, but if little effort is made to recognize, treat and control the disease there may be an appreciable rise above the 10 per cent rate of infection with the parasite which now exists in the population. These recent events have served once again to focus attention on the problem of amebiasis with its numerous troublesome and as yet partly unsolved ramifications.

It is unfortunate that an infection which has such a high incidence in the population requires the impetus of an actual or impending outbreak to create interest either on the part of a physician who handles the infected person or on the part of a public health worker whose energies should be directed toward preventing the transmission of the parasite from one host to another. The Chicago epidemics of 1933 and 1934 with their attendant implications served as motivating forces for developing interest in this disease for medical practitioners and public health officials throughout the United States. In the wake of these epidemics numerous surveys and investigations were conducted by workers in various sections of this country who previously had been little concerned with or who had

shown only a minor interest in the problem of amebiasis.

Even though many of the problems associated with amebiasis have been clarified during the intervening years since the Chicago epidemics and even though numerous worthwhile and important articles have appeared in the medical and public health literature, there is still a considerable amount of ignorance shown by some who are faced with issues involving the treatment, control and prevention of infections with *Endamoeba histolytica*. Surveys of various types of population groups as well as clinical reports indicate that amebiasis occurs not only in the southern States but also in most of the northern ones. The present return to this country of an increasing number of persons with amebiasis should emphasize to those concerned the importance of possessing adequate information as to the method of handling such persons, not only from the standpoint of treatment, but from the standpoint of their potentially dangerous relationship to their immediate family or the community at large.

Within the last 10 years there has developed a much clearer understanding of the clinical concepts of amebiasis. There is a growing tendency by clinicians to appreciate the true implications of the terms "amebiasis" and "amoebic dysentery." For some years in the past any infection with *Endamoeba histolytica*, irrespective of the symptomatology produced, was rather loosely referred to as "amoebic dysentery." While it is true that a characteristic dysentery does occur with the more serious infections, nevertheless with the majority of persons harboring the parasite, dysenteric symptoms do not appear. The term "amebiasis" may

be applied to any condition caused by an infection with *Endamoeba histolytica*, while the term "amoebic dysentery" should be reserved for those infections demonstrating appreciable amounts of blood and mucus in a diarrheic stool. A clear picture of amebiasis only may be obtained if one appreciates the fact that an infection with *Endamoeba histolytica* may produce a variety of gastro-intestinal symptoms quite different from those associated with classical amoebic dysentery.

MODES OF INFECTION

Food or drink contaminated with fecal material containing *Endamoeba histolytica* is the usual source of infection for man. Although the cyst is the stage in the life cycle of the parasite most often concerned with transmission from host to host, the trophic or motile stage may at times be infective when swallowed. There is ample experimental evidence available to prove that the motile form may be infective, but it is highly improbable that under natural conditions transmission by this stage occurs. The trophozoites are particularly susceptible to environmental hazards, with transmission occurring only as the result of direct transfer of moist feces. The person with acute amoebic diarrhea or dysentery with motile stages in the feces is not much of a potential source of infection, but an infected person with symptoms other than diarrhea or dysentery and who passes formed stools is the real menace. Cysts, as a rule, are not found in diarrheic or dysenteric stools. The convalescent from an acute attack and the so-called "carrier" passing formed stools containing cysts are the important sources of infection for others.

There are several ways infection may be transmitted. Water is an effective agent for the transfer of cysts of *Endamoeba histolytica* since they are able to remain viable in it for a considerable period. In communities where an adequate control of the water supply is not maintained there is the frequent danger that fecal pollution will occur, creating conditions which favor the transmission of cysts. An outbreak of amoebic dysentery may occur when a water supply becomes contaminated with sewage. It is probable that the main source of infection for the large number of cases of amoebic dysentery which originated in Chicago during 1933 and 1934 was the grossly polluted water supply in a large hotel. Examination of the plumbing of this hotel indicated that direct connections existed between the sewer and the water supply.

In many countries throughout the world, vegetable gardens are fertilized with human excrement or irrigated with sewage. In such localities it is to be expected that a high incidence of amebiasis would be found since certain vegetables are frequently eaten

raw. In spite of laws to the contrary, these fertilizing and irrigation methods are sometimes practiced in this country.

Infected persons who handle food play an important role in the transmission of the parasite. Although there has been a tendency among certain investigators to minimize this role, it is not unreasonable to believe that infected food handlers who are not particularly scrupulous about their personal habits could readily serve as sources of infection.

Flies and cockroaches as well as other insects may contaminate food and drink by their droppings or by fecal material adhering to their feet or bodies. Viable cysts of *Endamoeba histolytica* have been found in the vomitus and droppings of flies and in the dejecta of cockroaches for 24 to 48 hours after these insects had fed on feces containing cysts. There is little doubt that insects do play a role in the epidemiology of amebiasis but to what extent and under what conditions have not been thoroughly investigated.

In institutions where sanitary conditions are poor, numerous cases of amebiasis may occur as the result of contamination of the environment with fecal material containing cysts. Likewise, in a home where a low hygienic level exists infection may be spread from one infected member to the rest of the family. Numerous instances of familial infections have been reported.

Natural infections with *Endamoeba histolytica* have been found in such animals as monkeys, rats, dogs and pigs, but to what extent these hosts serve as reservoirs of infection for man has not been determined.

CONTROL PROBLEMS

In order to fully appreciate the problem of amebiasis in all of its aspects, it is necessary that not only physicians but public health personnel be familiar with the difficulties involved. There are certain phases of the problem which have not been clarified. It is upon the solution of these that the future progress in the treatment, control and prevention of amebiasis depends at least in part.

The exact status of the "carrier" in the epidemiology of this disease has not been clearly defined. Persons who are designated as "carriers" do not exhibit any definite symptomatology but pass cysts in their stools. Authorities differ in their opinion as to whether a true carrier state occurs in persons harboring the parasite. Some maintain, on the basis of observations obtained from both human and animal infections, that the presence of *Endamoeba histolytica* in the intestines is always associated with tissue destruction. It may be that minute lesions are being continually produced but, due to the resistance of the host, the lesions heal rapidly. On the other hand, sev-

eral investigators have reported that they were unable to find any evidence of tissue invasion in material obtained from human and animal sources. In further support of this view is the fact that *Endamoeba histolytica* may be readily maintained in test tube culture in the absence of living tissue.

The question with regard to the variability in virulence of different strains of the parasite likewise has an important bearing in the epidemiology of amebiasis. The researches of Meleney and Frye have clearly demonstrated that strains vary in pathogenic activity. Some authorities maintain that certain races or strains of *Endamoeba histolytica* are not pathogenic for man. Although these races or strains may not produce any symptoms in man, they sometimes cause severe lesions in kittens. In view of our present uncertain position with respect to these problems, it is necessary from a public health standpoint to treat all individuals infected with the parasite even though they exhibit no symptomatology. Likewise, strain or race variation either from a morphologic or infectiousness standpoint should not be considered a basis for withholding treatment.

LABORATORY PROCEDURES

The detection of an amoebic infection is primarily a laboratory problem. A most essential requisite for the correct microscopic differentiation and identification of the causative organism of amebiasis is that the laboratory examination be entrusted only to those who are skilled in the recognition of the protozoa of the intestinal tract of man. If the personnel of a laboratory does not include a competent parasitologist, every effort should be made to send specimens submitted for examination to another laboratory which is staffed and equipped to perform a critical study.

There are certain prerequisites which should not be neglected if a correct diagnosis is to be made. The necessity of studying only absolutely fresh stools has long been recognized. If this requirement is not observed, difficulties will be encountered. An effort should be made to obtain the proper type of fecal specimen. A normally evacuated stool is preferred to one produced by a strong purgation. At times the administration of a mild cathartic or bile salts to the patient may aid in the detection of the parasite. Castor oil, mineral oil and barium preparations should be withheld during the period specimens are being collected as they complicate the microscopic picture.

Since the number of parasites occurring in a stool specimen vary considerably from day to day, it is imperative that more than one stool specimen be examined. In some instances 10 to 15 stools have been examined before *Endamoeba histolytica* has been found.

For obvious reasons, it is impossible to designate the definite number of specimens that are required as conditions vary with each individual. However, many authorities believe that at least six examinations should be performed before a patient can be declared free from intestinal protozoa.

The use of saline and iodine-stained fresh fecal smears, the preparation of permanent wet-fixed iron-hematoxylin stained smears and the employment of concentration methods are essential procedures which should be utilized in the laboratory diagnosis of amebiasis. Cultural methods and the use of the sigmoidoscope which exposes the ulcers and facilitates the collection of suitable material for examination are diagnostic aids which help considerably in certain instances.

A complement fixation test also has been employed for the detection of infections with *Endamoeba histolytica*. Although the test has been in use for a number of years, it has not been perfected to the extent that warrants its adoption as a routine laboratory procedure. It is to be hoped that its effectiveness and limitations will eventually be more clearly defined since a serologic test of this type would be of considerable help in the laboratory diagnosis of amebiasis. In those instances where it is difficult to detect the parasite by the usual procedures, such a test would disclose many infections which often remain undiagnosed. The complement fixation test would be particularly applicable in cases of amoebic hepatitis and amoebic abscess of the liver since, with these complications, the parasites are frequently confined to the liver and do not occur in the tissues or lumen of the intestinal tract.

Persons suffering with amebiasis or amoebic dysentery frequently present symptoms which are very similar to those which occur in acute or chronic appendicitis. *Endamoeba histolytica* may invade the appendix, causing definite symptoms of appendicitis, but similar symptoms may be produced without invasion of this organ by the parasite. It is not uncommon for a mistake in diagnosis to be made with respect to these two conditions and, if surgery is performed in the presence of a severe amoebic infection, the results are often fatal. For this reason it may be wise to examine stool specimens from all patients who show symptoms of appendicitis. If *Endamoeba histolytica* is found, drug therapy should be instituted before resorting to surgical intervention when an immediate operation is not indicated.

THERAPY

Effective chemotherapeutic agents are available for the treatment of amebiasis. Success in therapy depends upon the judicious use of these agents employed singly or in combination. The symptomatology pres-

ent, the pathology, the location of the parasites—whether in the lumen or the intestine or deep in the tissues—are all factors which control the selection of the specific agent or agents to be administered.

Emetine hydrochloride is a valuable amebicidal drug, but it is toxic and is only effective against tissue parasites and not against those in the lumen of the intestine or those lying on the surface of the mucous membrane. It is the most effective drug available for the treatment of amebic hepatitis and amebic abscess of the liver. Of the arsenical preparations employed, carbarsone has produced the best results and many authorities consider it the most efficient single drug for the treatment of intestinal amebiasis. Some clinicians favor the use of iodine compounds such as vioform, diodoquin and chiniofon. The arsenical and iodine compounds when used alone do not always eliminate the infection, although satisfactory results have been obtained in resistant cases when these drugs are administered concurrently with emetine hydrochloride. Alternate courses of carbarsone and vioform are frequently employed when an infection proves refractory to the single administration of either of these drugs. The ideal agent for the treatment of amebiasis with all of its complications has not been discovered. Such a drug will have to be relatively nontoxic and possess amebicidal powers strong enough to destroy the parasites which occur not only in the lumen of the intestine, but destroy those which reside in the various tissues as well.

PREVENTION AND CONTROL

The prevention and control of amebiasis is directly concerned with the proper disposal and treatment of human feces. It is of utmost importance that various practices which have been recommended for the sanitary disposal of feces be rigidly followed. The use of human excrement for fertilizing vegetable gardens should be prohibited. Flies and cockroaches should not be allowed to gain access to food and drink. Water supplies should be protected from fecal pollution. Sewage should be disposed of in a safe and proper manner.

It is important to note that the amount of chlorine which is usually employed in the purification of water will destroy the disease-producing enteric bacteria but will have no effect on the cysts of *Endamoeba histolytica*. In order to destroy the cysts of this protozoan parasite, it is necessary, if this chemical is to be used, to first superchlorinate the water and then after a required contact period dechlorinate it. Superchlorination was effectively employed in the field for the emergency treatment of water supplies during the war. The precipitation and sand filtration methods which

are used to purify city water supplies, however, do remove the cysts of *Endamoeba histolytica*. For the sterilization of individual water supplies, bursoline tablets have been recommended. These tablets containing iodine, diglycine, hydriodide and dihydrogen pyrophosphate dropped into water will destroy cysts of *Endamoeba histolytica* after a five-minute contact.

The detection and treatment of all "carriers" would help immeasurably in reducing the incidence of amebiasis. It is obvious, however, that due to the numbers of infected persons involved, such an effective prophylactic measure would be difficult to institute and maintain. However, an effort should be made to eliminate the infection from all persons who have been shown to harbor the parasite. This applies particularly to food handlers in institutions and public eating places. While it is true that economic limitations will not permit the isolation and treatment of infected food handlers in many instances, local public health authorities should always bear in mind that such individuals are of potential danger to the community.

NUTRITIONAL EFFECT OF MINERAL OIL

The habitual use of mineral oil is so widespread and may have such serious nutritional consequences that an excerpt from an article by Dr. Norman Jolliffe in a recent issue of *Nutrition Notes* is reprinted here. Dr. Jolliffe is Associate Professor of Medicine, New York University School of Medicine, and Lecturer in Public Health Practice, College of Physicians and Surgeons, Columbia University.

"Mineral oil is one of the most commonly used laxatives, although warnings have been given frequently about the harmful effect that it has on the utilization of carotene, the provitamin A, a very important nutritional factor. Most, if not all, of the carotene in green and yellow vegetables and fruits, which the body normally converts into vitamin A, may be absorbed by the mineral oil and eliminated unused by the oil. Since most people get a large part of their vitamin A requirements in the form of carotene, users of mineral oil may, therefore, be deprived of the many benefits of this vitamin. When mineral oil is used over a long period of time, real harm may result. This absorption of the vitamins by the mineral oil may take place even when the vegetables or fruits are eaten at dinner and the mineral oil is taken at bedtime.

"Recent experiments show that mineral oil interferes also with the utilization of other essential food factors, especially vitamin D and the minerals, calcium and phosphorus, which are necessary for building good bone and tooth structure, and vitamin K, which helps to assure proper coagulation of the blood, especially after childbirth. Since these are factors that are very important in the diet during pregnancy to insure health protection for the mother and the

best growth of the coming baby, it seems inappropriate that mineral oil should be used so commonly by pregnant women.

"In reducing diets, where calories must be kept low, mineral oil is sometimes suggested as an ingredient for salad dressing or mayonnaise since the mineral oil provides no food value, whereas salad oil dressings add considerably to the caloric content of the diet. A mineral oil dressing, however, deprives the body of the carotene of the various kinds of vegetables which are used in salads.

"The wartime shortage of oil, lard, and other fats has led some food manufacturers to use mineral oil in salad dressings and for frying salted nuts, potato chips and doughnuts for sale to consumers. Such practices may have serious nutritional consequences, and housewives should read the labels on the containers of such products to assure themselves that mineral oil has not been used.

"Because mineral oil is so widely used, it seems apparent that many people have not realized these harmful effects it may have. The harm may far outweigh its advantages. Certainly, it should never be taken except on the specific recommendation of a physician."

WHAT THE PUBLIC KNOWS ABOUT POLIOMYELITIS

Results of a Gallup poll reported recently in the press indicate that the public knows little about the much publicized disease, poliomyelitis, and what is known by many people is wrong.

About one-third (30 per cent) of the people interviewed have exaggerated fears of the disease, believing that poliomyelitis always leaves its victims crippled or paralyzed.

Only half of the people thought infantile paralysis is communicable, 29 per cent thought it definitely was not communicable and 22 per cent had no opinion.

Fifty-two per cent had heard of the Kenny method of treatment and of those the great majority believed it beneficial.

Replies to the question, "What do you think causes infantile paralysis?" in order of mention are: Don't know, 48 per cent; germ (virus), 25; flies or insects, 9; unsanitary conditions, polluted water, 6; improper diet, malnutrition, 3; improper care, overexertion, weakening of system, 4; nerve defect, 2; inherited, born that way, 1; poor blood circulation, 1; miscellaneous, 7; cause not yet discovered, 2.

MUSSEL QUARANTINE RESCINDED

The annual quarantine order of the State Board of Health forbidding the gathering of mussels from the California shore was rescinded, effective October 31st.

LEGAL CHANGES REGARDING BUILDING PERMITS

Changes in the Health and Safety Code relating to building permits which provide for the charging of fees were effected by Chapter 1147 of the acts of 1945.

Sections 19132 and 19138 are amended and new Sections 19132.3 to 19132.7 are added to the code by the legislation.

A sliding scale of fees based upon the value of the work to be done is established ranging from \$2 if the work will exceed \$50 in cost to \$65 if the work will exceed \$50,000 in cost with an additional 50 cents for each additional \$1,000 over \$50,000.

Provision for higher fees is made in Section 19132.3, which states:

"Whenever the governing body of any city or county determines that the expenses of the enforcement agency subject to its jurisdiction incurred in the issuing of permits, including examining the applications, plans and specifications filed with the enforcing agency, are not met by the fees prescribed in this section, such governing body may adopt an ordinance prescribing such fees for filing applications as will pay the expenses of the enforcement agency incurred in issuing permits pursuant to this chapter."

Specifically excluded from the payment of fees are Federal, State and local governments, school districts, and buildings subject to the provisions of the State Housing Act.

MERCURY HAZARD IN SCHOOL LABORATORY

Exposure of employees of a university laboratory to hazardous quantities of mercury vapor was found by the Bureau of Adult Health in a recent study requested to the university authorities.

The principal exposure in the laboratory was in the accumulation of mercury in the sinks where waste globules produced sufficient mercury vapor to bring the concentration in the air above the maximum allowable of 0.10 milligrams per cubic centimeter of air. Measurable quantities of mercury were present in the atmosphere when air was purged from the top of a mercury minometer.

A potentially hazardous condition exists when minometers are filled and are cleaned of mercury. Since in this laboratory these two operations take place only once or twice a year, they were not considered significant from the standpoint of chronic mercury poisoning.

Mercury spilled on laboratory benches and deposited in the cracks of floors and cabinets did not, in this laboratory, appear to be an appreciable health hazard.

DDT INDICATED TO CONTROL INSECT BREEDING IN INDUSTRIAL WASTES, CESSPOOLS AND SEPTIC TANKS

Use of DDT to control the breeding of flies and mosquitoes in industrial wastes and in home cesspools and septic tanks is indicated by a demonstration conducted by the Bureau of Sanitary Engineering in October.

Drainage from a cannery in Oroville each year has caused a scourge of flies and mosquitoes in the city. The cannery is large and its drainage produces nearly an acre of scum. Literally millions of flies and other insects breed in the warmth of the decomposing scum.

In cooperation with the city officials of Oroville, DDT emulsion was sprayed over the surfaces of the scum. About 0.5 pound of DDT per 1,000 square feet was used. This amount is equivalent to about 1.3 gallons of commercial 5 per cent DDT solution per 1,000 square feet.

The kill of larvae, flies and other insects was almost complete. The larvae were observed to emerge to the surface and die. No further breeding had occurred up to four weeks after the spraying.

This experience indicates the use of DDT in the control of the breeding of flies and mosquitoes in home cesspools and septic tanks which are not insect-tight. One-half pint of 5 per cent DDT solution evenly distributed over the surface of a cesspool with a surface area of 50 square feet should control the breeding of insects within the cesspool for several weeks.

"THE DOCTORS TALK IT OVER"

"The Doctors Talk It Over," a radio broadcast sponsored by Lederle Laboratories, Inc., is heard over nine California stations every Tuesday night.

The broadcast is heard from 10.30 to 10.45 p.m. on the following stations: Bakersfield, KPMC; Fresno-Visalia, KTKC; Riverside, KPRO; San Diego, KFMB; San Francisco, KGO; Santa Barbara, KTMS; Stockton, KWG; Watsonville, KHUB.

In Los Angeles, the program is heard over KECA from 10.45 to 11.00 p.m.

The first volume of 26 scripts used in the series from October 6, 1944, to March 30, 1945, is available to public health workers from Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York 20.

Under a grant from the National Foundation for Infantile Paralysis, more than 300 chemical substances have been tested at the University of Michigan in the hope of finding a drug which will destroy the virus of poliomyelitis.

SYPHILIS RANKS TWELFTH AS CAUSE OF DEATH IN CALIFORNIA

Syphilis has been called a "killer." Officially how much of a killer syphilis is in California can be seen from the following figures:

Year	Number of Deaths *	Death rate per 100,000 **
1940-----	816	11.8
1941-----	1,048	14.8
1942-----	1,107	14.9
1943-----	1,103	14.2
1944-----	1,027	12.3

It is true that syphilis has not been the cause of death in as many cases as have diseases of the heart, cancer, accidents, pneumonia and influenza, nephritis, tuberculosis, premature birth, diabetes mellitus, cirrhosis of the liver or suicide. However, it ranked twelfth as a cause of death in California in 1943 and 1944 and eleventh in the United States in 1943. Syphilis is also called the "great imitator" and, no doubt, a number of deaths assigned to other causes should in reality have been assigned to syphilis.

Death rates for syphilis have remained fairly constant in both California and the United States during 1940-44. These rates have also been approximately equal in the two areas as shown in the following table:

Syphilis Death Rates Per 100,000 Estimated Population

Year	California	United States ***
1940-----	11.8	14.4
1941-----	14.8	13.3
1942-----	14.9	12.2
1943-----	14.2	12.1
1944-----	12.3	Not available

Since legislation provides for blood tests of expectant mothers and since venereal disease control methods emphasize the finding of early cases of syphilis, the adequate treatment of the cases found by these two methods should reduce the mortality from syphilis. Congenital syphilis, which has been a "killer" in the age group under one year, and late syphilis, which has been a "killer" in the age groups 55 and over, should become almost nonexistent.

Because of the age groups which are affected by late syphilis, the results of the modern program of finding and treating early cases can not be measured by the death rate until from 20 to 40 years have elapsed.

The result of finding cases in expectant mothers and of treating syphilis during pregnancy are already beginning to show in the reduction of deaths due to syphilis among infants. In 1936 and 1937, before the prenatal law was in effect in California, there were 65

* Number of deaths are given in reports from the Bureau of Vital Statistics, California State Department of Public Health.

** Death rates for California are based on enumerated population, 1940, Bureau of the Census, and on estimated populations, 1941-44, California Taxpayers Association.

*** Death rates for the United States are from Mortality Reports by the Bureau of the Census.

and 64 deaths under one year of age due to syphilis. In 1943 there were 31 deaths and in 1944 there were 29 deaths due to syphilis in this age group.

Syphilis continues to be an important cause of death and presents a challenge to the public health worker.

CIVIL SERVICE EXAMINATIONS FOR DENTAL HYGIENISTS, JUNIOR PUBLIC HEALTH NURSES

Continuous duration civil service examinations for dental hygienists and junior public health nurses are announced by the State Personnel Board.

No written examinations will be held. Ratings will be based on the experience statement on the application which may be investigated and verified. Competitors must attain a rating of at least 70 per cent to qualify and the percentage rating of each competitor will determine his place on the eligible list.

Minimum entrance requirement for dental hygienists is possession of a valid license as a dental hygienist issued by the State Board of Dental Examiners. Entering salary is \$180 a month.

Junior public health nurses must have a valid license as a registered nurse in California, must have graduated from an accredited school of nursing and either: (1) Completion of six semester units of university work in the principles and practices of public health nursing and the control of communicable diseases; or (2) Six months of supervised experience in public health nursing in a health department or visiting nurse association. Entering salary is \$180 a month.

Applicants in both classifications must be (1) United States citizens; or (2) Nationals of nations allied with the United States; or (3) Nationals of nations with which the United States is at peace. California residence is not required.

Application forms may be obtained from the State Personnel Board, 108 State Building, San Francisco; 1015 L Street, Sacramento; or 104 State Building, Los Angeles.

VACANCIES IN STATE AND LOCAL PUBLIC HEALTH DEPARTMENTS, JULY, 1945

The extent to which public health department have been crippled through lack of professional personnel, particularly medical and nursing, during the war emergency is revealed in the summary of a study of vacancies existing in State and local health departments as of July, 1945.

The study was undertaken by the Surgeon General's Committee on Postwar Training of Public Health Per-

sonnel. The summary is published in *Public Health Reports* for October 19, 1945.

Copies of the survey questionnaire were sent to all State health departments and to all local health departments listed in the 1945 *Directory of Full-Time Local Health Officers*. Returns were received from 38 State and 930 local health departments, representing a return of about 80 per cent.

Following is the total number of vacancies existing in established positions by classification:

Health officers	99
Epidemiologists	31
Other M.D.'s	208
Graduate nurses	1,313
Sanitary or public health engineers.....	110
Sanitarians	212
Inspectors	113
Veterinarians	24
Dentists	38
Statisticians	47
Health educators	50
Nutritionists	26
Bacteriologists, serologists	98
Chemists	26
Laboratory technicians	105
X-ray technicians	50
Dental hygienists	15
V. D. Investigators	11
Medical social workers	17
Total.....	2,593

STATE DEPARTMENT OF INDUSTRIAL RELATIONS REORGANIZED

The California State Department of Industrial Relations has been reorganized under the provisions of Chapter 1431 of the Statutes of 1945 with eight divisions, as follows: Industrial Accidents, Industrial Safety, Apprenticeship Standards, Housing, Industrial Welfare, Labor Law Enforcement, Labor Statistics and Research and State Compensation Insurance Fund.

The function of the old Industrial Accident Prevention Bureau in the enforcement of safety orders has been transferred to the new Division of Industrial Safety.

The State Compensation Insurance Fund, which formerly was under the jurisdiction of the Industrial Accident Commission, is now a separate division.

The work of the old Division of Labor Statistics and Law Enforcement has been divided among two new divisions: Labor Law Enforcement and Labor Statistics and Research.

NEW MERCED HEALTH OFFICER

Dr. B. E. McDowell has been appointed health officer of Merced County, replacing Dr. L. R. Hillyer.

MOTOR VEHICLE TRAFFIC ACCIDENT DEATHS IN CALIFORNIA AND THE NATION

How safe you are on the streets and highways of California depends upon where you are. But wherever you are, you are less safe than if you were in many other parts of the United States.

The National death rate for motor vehicle accidents in 1944 was 18.3 per 100,000 population. The California rate was 29.0.

In the 580 cities which report motor vehicle traffic deaths to the National Safety Council, the death rate per 100,000 population was 11.2. Seventeen California cities are included among reporting cities. Their rates for motor vehicle traffic accidents are given below:

City	Death rate per 100,000
Berkeley	18.0
Beverly Hills	13.4
Glendale	8.8
Long Beach	18.9
Los Angeles	21.0
Oakland	24.8
Palo Alto	11.8
Pasadena	6.7
Richmond	33.1
Riverside	25.0
Sacramento	9.5
San Bernardino	15.6
San Diego	19.2
San Francisco	15.6
San Jose	25.3
Santa Monica	30.4
Ventura	45.1

Throughout the Nation, nearly 60 per cent of all motor vehicle deaths occur in rural areas and in cities of less than 2,500 population. The next highest proportion of deaths (23 per cent) occurs in cities with more than 100,000 population.

In 57 per cent of fatal accidents occurring in 27 States, drivers were reported in violation of the law. Chief violations were: Exceeding speed limit, 16 per cent; on wrong side of road, 7; did not have right of way, 6; under influence of alcohol, 5.

Thirty-three per cent of pedestrians who were killed in motor vehicle accidents were struck down when crossing between intersections, 23 per cent while crossing at intersections, and 18 per cent while walking in the roadway.

All statistics are from *Accident Facts*, 1945 Edition, National Safety Council.

book. Assistance in the preparation of the new edition was given by the Committee on Information and the Committee on Surgery of the Division of Medical Sciences of the National Research Council.

MORBIDITY REPORT — OCTOBER, 1945

Reportable diseases	Week ending					Total cases	5-yr. median	Total cases
	10/6	10/13	10/20	10/27	11/3	Oct.	Oct.	Jan.-Oct., inc.
Amebiasis (Amoebic Dysentery)	6	4	6	3	2	21		118
Anthrax								1
Botulism	1	4	5	6	5	26		214
Chancroid								
Chickenpox (Varicella)	82	149	201	178	201	811	946	40,311
Cholera, Asiatic								
Coccidioides granuloma				1		1		30
Conjunctivitis—acute infectious of the newborn (Ophthalmia Neonatorum)	1			2		3		19
Dengue								
Diarrhea of the newborn	5		2			8		37
Diphtheria	31	20	37	42	32	162	98	1,007
Dysentery, bacillary	8	6	2	7	1	24		237
Encephalitis, infectious	19	2	6	3	7	37		202
Epilepsy	20	21	38	30	21	130		1,328
Food poisoning	90	4		3		97		443
German measles (Rubella)	54	45	59	44	58	260		10,758
Glanders								
Gonococcus infection	597	600	638	697	495	3,027	1,521	23,413
Granuloma inguinale		1	1	1	1	4		38
Influenza, epidemic	13	7	8	23	8	59	95	650
Jaundice, infectious		15		1	9	25		184
Leprosy	1					1		13
Lymphogranuloma venereum (lymphoprophitis venereum, lymphogranuloma inguinale)	5	2	5	2	4	18		208
Malaria	11	5	11	13	13	53	17	194
Measles (Rubeola)	124	199	187	205	225	940	259	31,504
Meningitis, meningococcal	9	6	3	8	7	33	20	583
Mumps (Parotitis)	202	242	300	319	280	1,342	1,131	33,683
Paratyphoid fever, A and B	2	2	1		2	7		26
Plague								
Pneumonia, infectious	34	22	24	35	37	152	223	2,848
Polio myelitis, Acute anterior	40	27	46	37	36	186	61	683
Psittacosis								
Rabies, human								
Rabies, animal	9	3	9	5	6	32	55	523
Relapsing Fever			1			1		4
Rheumatic fever	21	13	25	20	20	99		640
Rocky Mountain spotted fever								
Scarlet fever	165	140	186	219	219	929	477	11,734
Septic sore throat, epidemic								
Smallpox (variola)								
Syphilis	499	477	446	625	443	2,490	2,009	23,409
Tetanus	1	1		1	2	5		69
Trachoma		1	1	2		4		24
Trichinosis								
Tuberculosis, pulmonary	139	124	166	179	194	802	584	6,908
Tuberculosis, other forms	7	13	11	7	24	62	41	511
Tularemia								
Typhoid fever	2	4	4	2	1	13	23	117
Typhus fever	1	9	3	1	3	17		41
Undulant fever (Brucellosis)	5	3	1	8	8	25	26	223
Whooping Cough (Pertussis)	172	134	145	121	125	697	525	12,994
Yellow Fever								
Totals						12,607		206,100

NOTE: Military cases, if any, not included.

printed in CALIFORNIA STATE PRINTING OFFICE 50500 10-45 7M

FIRST AID TEXTBOOK REVISED

A new edition of the *First Aid Textbook* has been issued by the American Red Cross. The advance of medical science and the experience with first aid in World War II necessitated a complete revision of the

Warner G. Rice,
Director General Library,
Univ. of Michigan,
Ann Arbor, Mich.

di-
md
cal

total
seen

an-
ct,
nc.

118
1
11
215
0,311
30

19
1
37
1,007
237
263
1,328
442
0,784
3,412
38
660
184
12

208
194
1,504
588
3,688
98
2,846
683
3
1
528
646

1,738
4
3,409
6
25
6
6,906
516
3
117
41
22
12,994
36,168